

6th Biennial
Scientific Conference on the
Greater Yellowstone Ecosystem

YELLOWSTONE LAKE

HOTBED OF CHAOS OR RESERVOIR OF RESILIENCE?



Proceedings

Edited by
Roger J. Anderson and David Harmon

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YELLOWSTONE CENTER FOR RESOURCES
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Foreword

Since the establishment of Yellowstone National Park, its riches have largely been protected through the efforts of generation after generation of park managers and friends. The park's status as a World Heritage Site and a Biosphere Reserve affirm its international recognition as a unique place worthy of preservation. Its relatively unimpaired condition as a naturally functioning ecosystem makes it an ideal place to do research, even while its important standing in the world makes it a place charged with political and emotional controversy.

Many of us see good science as the best antidote to controversy, as so, the purpose of the greater Yellowstone conference series, instituted in 1991, is to encourage the awareness and application of wide-ranging, high-calibre scientific work on the region's natural and cultural resources. There continues to be so much interest in Yellowstone science and issues that a biennial series, with the active involvement of professional societies and other institutions, provides a perfect forum for the hundreds of researchers doing work here.

The Sixth Biennial Conference focused on a central feature of the Yellowstone ecosystem's landscape, Yellowstone Lake—from its depths, where submerged hot springs and spires emerge atop the Yellowstone caldera, to its beaches, where rare plants and evidence of prehistoric peoples erode at the mercy of wind, waves, and modern footsteps. The conference was interdisciplinary in nature and addressed management issues, natural features, and the human history associated with the Yellowstone Lake basin. Session topics included archeology, climate and environmental change, fisheries and ecosystem-level functions, and hydrothermal and geologic processes.

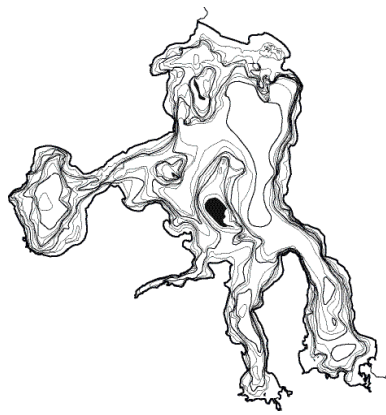
The conference's featured speakers included Dr. Robert Smith, a University of Utah geophysicist who has conducted research in the area for 45 years. Dr. Nigel Trewin of the University of Aberdeen discussed his studies of ancient and extinct hot springs in Scotland, and drew comparisons to fossils preserved more recently in Yellowstone's hot springs. Dr. Cathy Whitlock of the University of Oregon discussed her research examining the prehistoric record of climate change, vegetation, and fire in the ecosystem by looking at pollen and charcoal records preserved in lakes. Dr. Pat Shanks, a research geologist for the USGS, discussed some of the remarkable spires, hot springs, and geysers that have been found on the floor of the lake.

Other conference highlights included Dr. Andrew Munro's presentation on the potential contributions of microchemistry to forensic science related to the puzzle of when and from where exotic lake trout many have been introduced to Yellowstone Lake. Dr. Russel Cuhel, from the University of Wisconsin at Milwaukee, presented an outstanding collection of photographs related to the underwater spires and thermal features of Yellowstone Lake. Renowned cinematographer Bob Landis presented film footage captured by a remote underwater camera that included Yellowstone Lake's spires and their microbial colonies, geysers erupting from the bottom of the lake, and cutthroat trout spawning up tributary streams.

Nearly 150 people attended the conference, including members of the public as well as scientists, authors, media representatives, and individuals from a number of government agencies. We hope these conferences and their proceedings continue to contribute to professional knowledge and debate on the many aspects of this extraordinary area.

John D. Varley
Director, Yellowstone Center for Resources





Greater Yellowstone Ecosystem Biennial Scientific Conferences

- 1991 Plants and Their Environments
- 1993 The Ecological Implications of Fire in Greater Yellowstone
- 1995 Greater Yellowstone Predators: Ecology and Conservation in a Changing Landscape
- 1997 People and Place: The Human Experience in Greater Yellowstone
- 1999 Exotic Organisms in Greater Yellowstone: Native Biodiversity Under Siege
- 2001 Yellowstone Lake: Hotbed of Chaos or Reservoir of Resilience?